

EDUCATION

Bachelor of Engineering 2015-2019	Netaji Subhas University of Technology, Delhi (NSUT), India	Electronics and communication Engineering	Overall Percentage: 76.3%
High school 2013-2015	Montfort Sr. Sec. School, Roorkee, Uttarakhand, India		12th Percentage: 96%

WORK EXPERIENCE

PROGRAM ANALYSIS GROUP | RESEARCH ASSOCIATE

Aug 2019 – Present, Advisor: [Prof. Rahul Purandare](#)

- Working on extraction of object oriented features like class relationships from a binary and representing them as UML diagrams.
- Implementing a Prolog based structural design pattern detection tool from a given UML diagram.

GOOGLE SUMMER OF CODE'18 | SOFTWARE ENGINEERING INTERN

May 2018 – Aug 2018, Mentor: Christian Mauderer, Punit Vara

- One of the 1268 students selected by Google all over the world to work with leading open source organizations.
- Worked on Real-Time Executive for multi-processor systems([RTEMS](#)) and Flexible I/O tester(FIO) to develop a port and use it for benchmarking various In-memory, Flash and Block filesystems supported by RTEMS.
- Developed a port of FreeBSD's MMCCAM framework for RTEMS, to facilitate support for SDIO cards over standard SD bus.

NSUT, DELHI | UNDERGRADUATE RESEARCH ASSOCIATE

Aug 2018 – May 2019, Advisor: [Prof. Kunwar Singh](#)

- Surveyed several biological and artificial neural networks along with their hardware implementation
- Designed and simulated a novel Convolutional neural network(CNN) hardware architecture using CMOS Memristor based hybrid circuits.
- Designed and simulated a novel Tangent hyperbolic activation function CMOS implementation along with hardware realization of 2D Maximum pooling layer.

MAJOR PROJECTS

CANSAT'18 | EMBEDDED SOFTWARE TEAM

Aug 2017 – May 2018 | Team name: Team Kalpana-1

- Secured 20th world rank in final rocket launch out of 100+ teams in CANSAT'18 organized by American Astronautical Society (AAS).
- Designed a complete actuation system for automatic heat shield deployment at a certain height. Activities involve designing a PCB, interfacing various sensors and ZigBee module with ATMega328.

INTEL 8085 BASED SMART MIRROR

Jan, 2018 – May, 2018

- Designed a system for implementing smart mirror using Intel 8085 and ESP8266 wifi module.
- Deployed an android mobile application and a web API for storing and retrieving data from an online database.

PUBLICATIONS AND PATENTS

- **Udit Kumar Agarwal**, Vara Punit Ashokbhai, Gedare Bloom, Christian Mauderer, and Joel Sherrill. 2018. Comparison of File Systems in RTEMS. In Proceedings of [EWiLi](#) Embedded Operating System Workshop ([EWiLi'18](#)). ACM, New York, NY, USA, 6 pages.
- **Udit kumar agarwal**.2019. A Novel Vehicle positioning and tracking system for intra-city bus service using LoRaWAN. Provisional patent application number: 201911000652 .**Patent Pending** .

AWARDS & ACTIVITIES

2019	Mentor	Google summer of code'19 @ RTEMS
2018	Mentor	Google Code-In @ RTEMS
2017	Quarter-finals	TI India Innovation Challenge Design Contest
2015	AIR: 2804	Joint entrance examination (JEE-MAINS)